

The main research interests of the members of the 5<sup>th</sup> research team are focused on the following topics:

- Structural Properties of materials exhibiting superconductivity, magnetism, multiferroelectricity
- Structure-properties-function relationship in these materials
- Neutron and Synchrotron X-ray scattering
- Phase transitions
- nanostructure magnetic materials (magnetostrictive materials, hard magnetic thin films as permanent magnets, thin films of magnetic materials for sensors applications)
- Preparation of “thick magnetic films”, design and patterning of MEMS
- Amorphous magnetic systems and sensors

<b>List of Research group’s top 10 publications in journals</b>	Citations
1. “Magnetic Excitation of the Doped-Hole State in Diamagnetic $\text{La}_2\text{Cu}_{0.5}\text{Li}_{0.5}\text{O}_4$ ”, Y. Yoshinari, P. C. Hammel, J. A. Martindale, <u>E. Moshopoulou</u> , J. D. Thompson, J. L. Sarrao, Z. Fisk, <i>Physical Review Letters</i> <b>77</b> (#10), 2069-2072 (1996).	23
2. “Structure and Low-temperature Properties of $\text{SrB}_6$ ”, H. R. Ott, M. Chernikov, E. Felder, L. Degiorgi, <u>E. G. Moshopoulou</u> , J. L. Sarrao, Z. Fisk, <i>Zeitschrift Für Physik B</i> <b>102</b> , 337-345 (1997).	43
3. “Superconductivity in $\text{LiTi}_2\text{O}_4$ ” (Invited Review Article), <u>E. G. Moshopoulou</u> , <i>Journal of the American Ceramic Society</i> <b>82</b> , 3317-3320 (1999).	14
4. “Pressure-Induced Superconductivity in Quasi-2D $\text{CeRhIn}_5$ ”, H. Hegger, C. Petrovic, <u>E. G. Moshopoulou</u> , M. F. Hundley, J. L. Sarrao, Z. Fisk, J. D. Thompson, <i>Physical Review Letters</i> <b>84</b> , 4986-4989 (2000).	446
5. “Structural Studies of Charge Disproportionation and Magnetic Order in $\text{CaFeO}_3$ ”, P. M. Woodward, D. E. Cox, <u>E. G. Moshopoulou</u> , A. W. Sleight, S. Morimoto, <i>Physical Review B</i> <b>62</b> , 844-855 (2000).	81
6. “Crystal Growth and Intergrowth Structure of the New Heavy Fermion Compounds $\text{CeRhIn}_5$ and $\text{CeIrIn}_5$ ”, <u>E. G. Moshopoulou</u> , Z. Fisk, J. L. Sarrao, J. D. Thompson, <i>Journal of Solid State Chemistry</i> <b>158</b> , 25-33 (2001).	82
7. “Neutron-Diffraction Study of Field-Induced Transitions in the Heavy Fermion Compound $\text{Ce}_2\text{RhIn}_8$ ”, <u>E. G. Moshopoulou</u> , K. Prokes, E. Garcia-Matres, P. G. Pagliuso, J. L. Sarrao, J. D. Thompson, <i>Physica B</i> <b>318</b> , 300-305 (2002).	4
8. “Crystal Structure of $\text{Ce}_2\text{RhIn}_8$ : An Example of the Complementary Use of Synchrotron X- Ray Reciprocal Space Mapping and Neutron Powder Diffraction to Study Complex Materials” <u>E. G. Moshopoulou</u> , R. M. Ibberson, J. L. Sarrao, J. D. Thompson, Z. Fisk, <i>Acta Crystallographica B</i> <b>62</b> 173-189 (2006).	4

9. "The Effect of Yttrium and Indium Doping on the Structure and Electrical Properties of Zinc-Ferrite Nanoparticles" M. Maletin, <u>E. G. Moshopoulou</u> , S. Jankov, S. Rakic, V. V. Srdic <i>Solid State Phenomena</i> <b>128</b> 101-105 (2007).	4
10. "Probing the Transition from Nano- to Bulk-Like Behaviour in ZnFe <sub>2</sub> O <sub>4</sub> Nanoparticles" <u>E. G. Moshopoulou</u> , O. Isnard, M. Milanovic, V. V. Srdic <i>Materials Science Forum</i> <b>674</b> , 207 (2011).	1

### Short CVs for the main and external research team members

**1. Evagelia Moshopoulou (team leader)** received her BSc in Physics from Aristotle University of Thessaloniki on 1987, her MSc in Science and Structure of Materials on 1991 and her Ph.D. in Experimental Condensed Matter Physics and Crystallography on 1995 both from Université Joseph Fourier, Grenoble-France. She was Postdoctoral Research Associate at the Condensed Matter and Thermal Physics Group of Materials Science and Technology Division of Los Alamos National Laboratory at USA from 3/1995 to 7/1998. She was Scientific Staff Member at the Powder Diffraction Group of the Solid State Physics Department and National Synchrotron Light Source of Brookhaven National Laboratory at USA from 8/1998 to 1/2000. Since then, she is scientific staff member of the Institute of Materials Sciences of National Center for Scientific Research "Demokritos": Researcher C from 2/2000 to 9/2004, Researcher B (tenured position) from 10/2004 to 11/2008 and Director of Research from 12/2008 to present. She published more than 50 articles at international journals and conference proceedings receiving more than 1050 citations.

**2. Stavros Thanos (main researcher)** is a Director of Research of the Institute of Material Science of the NCSR in Physics in 1981 from the University of Athens. During the period 1981-1987, he worked as a Researcher in the National Hellenic Research Foundation. His research interest is the theoretical study of many body systems and in particular a) the study of many spins systems using the Heisenberg Hamiltonian and its modifications and the interpretation of experimental data and b) The study of many electrons systems, using and developing of the Hartree-Fock, DFT etc methods. He has published 29 research papers in scientific journals and international conference proceedings, while he is one of the authors of the book 'Statistical Mechanics Research' Nova Science Publishers Inc. N. York.

**3. Athanasios Speliotis (external researcher)** is Physicist with postgraduate studies in solid state physics, and received his PhD in 1999 from the School of Applied Mathematical and Physical Sciences, of National Technical University of Athens, Greece. During the period 1999 – 2001 he worked as researcher in the Research and Development department at Bic Violex S.A., in Athens, while the period 2001 – 2007 he was a research associate at Institute of Materials Science of NCSR "Demokritos". Since 2007 up to date is a research officer at Institute of Materials Science of NCSR "Demokritos". He has published 40 research papers in international scientific journals.